2-2013

Recently Described Vulture One of Several New Avian Species from the Ashfall Fossil Beds

Rick E. Otto
University of Nebraska - Lincoln, rick.otto@unl.edu

Recently Described Vulture One of Several New Avian Species from The Ashfall Fossil Beds

When the first major excavation of the Ashfall site took place in the late 1970s, dozens of intact skeletons from a variety of animals were recovered from the bed of volcanic ash. Most of the skeletons were from larger mammals; barrel-bodied rhinos, three-toed horses, llama-sized camels, with very few small animals of any kind. But the birds were there, near the bottom of the fossil bed indicating that they perished before the large mammals during the ash storm. In general, bird remains are uncommon when it comes to fossil finds. Bird bones are fragile by nature, shaped by evolutionary selection forces for lightness - so the bone is thin and the interior hollow. Bird bones are easily chewed to bits by scavengers, they break to bits when trampled - usually destroyed before the deposition process takes place. The circumstances as well as method of burial at Ashfall, however, made a difference. Relatively fast and gentle accumulation of volcanic ash in the ancient waterhole allowed for preservation of the delicate remains of birds.

The most common bird to date, represented by numerous skeletons, is a crowned crane *Balearicia exigua*, a smaller version of the extant African crowned crane. A long-legged hawk *Apatosagittarius terrenus,* which converges on the modern secretary bird was another exotic find. Neither of the fossil birds compared well with other specimens in the fossil record, so Mike Voorhies solicited the help of an authority on ornithology and vertebrate anatomy, Dr. Alan Feduccia at the University of North Carolina-Chapel Hill. It was Alan Feduccia's study and subsequent publication which described the crowned crane and long-legged hawk as new species in the 1980s. Alan also noted that fossil bones from a rail, a songbird, and a gull were present in the Ashfall assemblage, but the material was not diagnostic and the exact taxa could not be determined.

The Ashfall vulture *Anchigyps voorhiesi*

A selection of bird bones from the Ashfall site recognized as an "old world vulture" were retained for study at that time, and it was not until recent that a colleague was able to confirm Feduccia's observations. Zihui Zhang (Capital Normal University, Beijing, China) and Helen F. James (Smithsonian Institution) helped determine that the vulture fossils were indeed an early example of an old-world vulture living in North America. The description of this new species was published in the Nov. 9, 2012 issue of the scientific publication, PLoS ONE. The new vulture is named *Anchigyps* (ānkă-jĭps) *voorhiesi* in honor of curator emeritus and

Ashfall paleontologist Michael Voorhies.

Anchigyps differs from the local turkey vultures of today. As noted by the authors of the research: "Characteristics of its wing bones suggest it was less specialized for soaring than modern vultures"… and…"It was likely an opportunistic predator or scavenger having a grasping foot and a mandible morphologically similar to modern carrion-feeding birds… The strong hind toe and the powerful flexion of the toes are suitable for catching prey or killing prey, suggesting that *Anchigyps voorhiesi* may have been in part a predatory bird, but the strong symphysis and the relatively narrow ramus of the mandible reveal it to be a carrion feeder, perhaps using its grasping feet for handling food items. This would not be surprising given the rich species diversity of the megafauna in the Late Miocene of North America that provided an abundant food resource."

Dr. Feduccia mentions the new fossil bird appears to be similar in morphology to *Gypohierax* the Palm-nut Vulture of central and southwest Africa. (Photo at right.)

Gypohierax, the palm-nut vulture of Africa.

Excerpts from:

Zhang Z, Feduccia A, James HF (2012) A Late Miocene Accipitrid (Aves: Accipitriformes) from Nebraska and Its Implications for the Divergence of Old World Vultures. PLoS ONE 7(11): e48842. doi:10.1371/journal.pone.0048842

References:

Feduccia A (1996) The Origin and Evolution of Birds. New Haven and London: Yale University Press.

Feduccia A, Voorhies MR (1989) Miocene hawk converges on secretarybird. Ibis 131: 349–354.

Feduccia A, Voorhies MR (1992) Crowned cranes (Gruidae: Balearica) in the Miocene of Nebraska. Natural History Museum of Los Angeles County Science Series 36: 239–248.

Credits:

Anchigyps illustration by Mark Marcuson

Gypohierax photo: Shutterstock _31400797